

Fig. 1

MGHTMKWGSLPPKRPCLMLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLR1YWQKDSKMVLAILP MGHTMKWGSLPPKRPCLMLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELFSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETTVMLSCDYSTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWRSLPPKRPCLMLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLJGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELJSLRIYWQKDSKMVLÄILP MGHTMKWGSL PPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWRSLPPKRPCLMLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNASTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLRIYWQKDSKMVLAILP MGHTLRPGTPLPRCLHLKLCLLLALAGLHFSSG---ISQVTKSVKEMAALSCDYNISIDELARMRIYWQKDQQMVLSIIS MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELJSLRIYWQKDSKMVLAILP MGHTLRPGTPLPRCLHLKLCLLLALAGLHFSSG---ISQVTKSVKEMAALSCDYNISIDELARMRIYWQKDQQMVLSIIS MGHTLRPGTPLPRCLHLKLCLLLALAGLHFSSG---ISQVTKSVKEMAALSCDYNISIDELARMRIYWQKDQQMVLSIIS $\widehat{\mathbf{L}}$ 1 1 1) <u>1</u> (1) (1) 1 $\widehat{\Box}$ - 7 (1) (1) 7 (1) Ξ $\widehat{\Box}$ a $\widehat{\tau}$ SEQ:061_R2_CD28BP-10 SEQ:065_R2_CD28BP-14 SEQ:066_R2_CD28BP-15 SEQ:067_R2_CD28BP-16 SEQ:068_R2_CD28BP-17 SEO:174_cd28A12-5 SEQ:051_R1_Clone_126 SEQ:056_R2_CD28BP-5 SEQ:057_R2_CD28BP-6 SEQ:059_R2_CD28BP-8 SEQ:060_R2_CD28BP-9 SEQ:062_R2_CD28BP-11 SEQ:063_R2_CD28BP-12 SEQ:064_R2_CD28BP-13 SEQ:049_R1_Clone_84 ;EQ:050_R1_Clone_118 SEQ:052_R2_CD28BP-1 SEQ:053_R2_CD28BP-2 SEQ:054_R2_CD28BP-3 SEQ:055_R2_CD28BP-4 SEQ:058_R2_CD28BP-7 SEQ:048_R1_Clone_71

(1) MGHTRRQGTSPSKCPYLNFFQLLVLAGLSHFCSG--VIHVTKEVKEVATLSCGHNVSVEELAQTRIYWQKEKKMVLTMMS

SEQ:278_Human_B7-1

Extracellular domain (ECD) -

Signal sequence

SEQ: 068_K2_CDZ8BF-1/ (1) MG
SEQ: 174_cd28A12-5 (1) MG
SEQ: 175_cd28A4-9 (1) MG
SEQ: 177_cd28A6-9 (1) MG
SEQ: 177_cd28A6-9 (1) MG
SEQ: 179_cd28A6-1 (1) MG
SEQ: 179_cd28A8-4 (1) MG
SEQ: 180_cd28A8-6 (1) MG
SEQ: 180_cd28A8-6 (1) MG

SEQ:183_cd28B6-3 SEQ:184_cd28b6-6 SEQ:185_cd28b8-5star SEQ:186_cd28c11-5

 $\widehat{\mathbf{G}}$

SEQ:182_cd28B4-3

 Ξ

MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWPSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLR1YWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLPQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSL PPKR PCLWLSOLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELJSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWRKDSKMXLAILP MGHTMKWGSLPPKCPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLR1YWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEKLTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLMLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMPSCDYSTSTEELTSLRIYWQKDSKMVLAILP

Fig. 2A

MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLR1YWQKDSKMVLAILP MGHTWKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETTVMLSCDYSTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELJFSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGTTPKSVTKRVKETVMLSCDYNTSTEELTSLR1YWQXDSKMVLAILP MGHTMKWGSLPPKRPCLMLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELJTSLR1YWQKDSKMVLAILP MGHTMKWGSL PPKRPCLMLSQLLVLTGLFYFCSG1TPKSVTKRVKETVMLSCDYNTSTEELTSLR1YWOKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQXDSKMVLAILP MGHTMKWGSLPPKRPCLMLSQLLVLTGLFYFCSG1TPKSVTKRVKETVMLSCDYNTSTEELTSLR1YWQKDSKMVLA1LP MGHTMKWGSLPPKRPCLRLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELJSLR1YWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSG1TPKSVTKRVKETVMLSCDYSTSTEELTSLR1YWQKDSKMVLA1LP MGHTWKWGSLPPKRPCLWLSQLLVLTGLFYPCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLRIYWQKDSKMVLAILP MGHTWKWGSLPPKR PCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLR1YWQKDSKMVLAILP MGHTLRPGTPLPRCLHLKLCLLLALAGLHFSSG---ISQVTKSVKEMAALSCDYNISIDELARMRIYWQKDQQMVLSIIS MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLR1YWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSL.PPKRPCLWLSQLLVLTGLFYFCSGTTPKSVTKRVKETVMLSCDYSTSTEELTSLR1YWQKDSKMVLAILP MGHTMEWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLMLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLRIYWOKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLR1YWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETTVMLSCDYNTSTEELTSLR1YWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSG1TPKSVTKRVKETVMLSCDYNTSTEELTSLR1YWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTDLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWOKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYSTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSG1TPKSVTKRVKETVMLSCDYSTSTEELTSLR1YWQKDSKMVLA1LP MGHTWKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELJSLRIYWQKDSKMVLAILP MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTWKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELTSLRIYWQKDSKMVLAILP MGHTMKWGSL PPKR PCLWLSQLLVLTGLFYFCSG I TPKSVTKRVKETVMLSCDYNTSTEELTSLR I YWOKDSKMVLA I LP Extracellular domain (ECD) Signal sequence - $\widehat{\Xi}$ $\widehat{1}$ F $\widehat{\Box}$ $\overline{\Box}$ $\widehat{\Box}$ (3 (1)Ξ (1) (1) (1) (1) (1) (1) Ξ (7)<u>1</u> (1) ਜ 1) 1 $\widehat{\Box}$ $\widehat{\exists}$ $\widehat{\Box}$ 7 1 <u>1</u> a ī 1 $\widehat{\Box}$ SEQ:189_cd28C8-6 SEQ:197_cd28E10-6 SEQ:198_cd28F7-2 SEQ:200_cd28F10-2 SEQ:202_cd28G2-8 SEQ:203_cd28G1-5 SEQ: 204_cd28G1-9 SEQ:205_cd28H4-3 SEQ:206_cd28H11-3 SEQ:207_cd28H6-6 SEQ:208_cd28E2-4 SEQ:209_cd28B4-5a SEQ:210_cd28A2-5a SEQ:212_cd28D5-6 SE0:213_cd28D10-4 SEQ:215_cd28E5-2 SEQ:216_cd28E8-6 SEQ:217_cd28E9-6 SEQ:219_cd28F3-5 SEQ:220_cd28F3-6 SEQ:283_CD28BP_Con SEQ:190_cd28c9-5star SEQ:191_cd28C2-4 SEQ:192_cd28D2-3 SEQ:193_cd28D2-9 SEQ:194_cd28D8-9 SEQ:195_cd28D11-1 SEQ:196_cd28D12-5 SEQ:199_cd28F8-4 SEQ:201_cd28F12-5star SEQ:211_cd28B4-5star SEQ:214_cd28E2-5star SEQ:187_cd28C6-1 SEQ:188_cd28C7-3 SEQ:218_cd28F3-1

Fig. 2B

GKVQVWPEYKNRTITDMNDNLRIVILALRLSDSGTYTCVIQKPDLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRT1TDMNDNPR1V1LALRLSDSGTYTCV1QKPVLKGAYKLEHLTSVRLM1RADFPVPT1NDLGNPSPN1 GKVQVWPEYKNRTITDMADNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPR.IVILALRLSDSGTYTCVIQKPDLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDKGTYTCVIQKPVLKGAYKLEHLTSVTLSIRADFPVPSITDIGHPAPNV GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI GDMNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLK-YEKDAFKREHLAEVTLSVKADFPTPSISDFEIPTSNI GKVQVWPEYKNRT1TDMNDNPR1V1LALRLSDSGTYTCV1QKPVLKGAYKLEHLASVRLMIRADFPVPT1NDLGNPSPN1 GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPSITDIGHPAPNV GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDKGTYTCVVQK-NENGSFRREHLTSVTLSIRADFPVPSITDIGHPAPNV GQVEVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRPSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTFPDI INNLSLMILALRLSDKGTYTCVVQK-NENGSFRREHLTSVTLSIRADFPVPSITDIGHPAPNV GKVQVWPEYKNRTITDIMDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLTSVRLMIRADPPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVVQK-NENGSFRREHLTSVTLSIRADFPVPSITDIGHPAPNV GKVQVWPEYKNRTITDMNDNPRIVILALRLSDKGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GQVEVWPEYKNRTFPDIINNLSLMILALRLSDKGTYTCVVQK-NENGSFRREHLTSVTLSIRADSPVPSITDIGHPAPNV GQVEVWPEYKNRTFPD1INNLSLM1LALRLSDKGTYTCVVQK-NENGSFRREHLTSVTLSIRADFPVPS1TD1GHPAPNV GKVQVWPEYKNRTITDIMDNPRIVILALRLSDSGTYTCVIQKPDLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRT1TDMNDNPR1V1LALRLSDKGTYTCVVQKPVLKGAYKLEHLTSVRLM1RADFPVPT1NDLGNPSPN1 GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRT1TDMMDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRT1TDMNDNPR1V1LALRLSDSGTYTCV1QKPVLKGAYKLEHLASVRLM1RADFPVPT1NDLGNPSPN1 GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRT1TDMNDNPRIVILALRLSDSGTYTCVIQK PVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI (42) (42) (81) (81) (81) 81) (81) (81) 81) (81) (81) (81) (81) (81) (81) (81) (81)(81)(81) (81) (81) (81)(81) (81) (81)(78)(81) (81) (81)(81) (81) (81) (81) SEQ:186_cd28c11-5 SEQ:177_cd28A6-9 SEQ:181_cd28B2-8 SEQ:184_cd28b6-6 SEQ:185_cd28b8-5star SEQ:066_R2_CD28BP-15 SEQ:067_R2_CD28BP-16 SE0:174_cd28A12-5 SEQ:175_cd28a4-5star SEQ:176_cd28A4-9 SEQ:178_cd28A6-1 SEQ:179_cd28A8-4 SEQ:180_cd28A8-6 SEQ:182_cd28B4-3 SEQ:183_cd28B6-3 SEQ:050_R1_Clone_118 SEQ:051_R1_Clone_126 SEQ:056_R2_CD28BP-5 SEQ:057_R2_CD28BP-6 SEQ:058_R2_CD28BP-7 SEQ:059_R2_CD28BP-8 SEQ:060_R2_CD28BP-9 SEQ:061_R2_CD28BP-10 SEQ:065_R2_CD28BP-14 SEQ:068_R2_CD28BP-17 SEQ:278_Human_B7-1 SEQ:048_R1_Clone_71 SEQ:049_R1_Clone_84 SEQ:052_R2_CD28BP-1 SEQ:053_R2_CD28BP-2 SEQ:054_R2_CD28BP-3 SEQ:055_R2_CD28BP-4 SEQ:062_R2_CD28BP-11 SEQ:063_R2_CD28BP-12 SEQ:064_R2_CD28BP-13

Extracellular domain (ECD)

GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRT1TDMNDNPR1V1LALRLSDKGTYTCVVQK-NENGSFRREHLTSVTLS1RADFPVPS1TD1GHPAPNV GKVQVWPEYKNRTITDMNDNPRIVILALRPSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDKGTYTCVIQKPDLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVVQK-NENGSFRREHLTSVTLSIRADFPVPSITDIGHPAPNV GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPDLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDKGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPDLKGAYKLEHLASVRLMIRADFPVPSITDIGHPAPNV GKVQVWPEYKNRTITDMNDNPRIVILALRLSDKGTYTCVVQKPDLKGAYKLEHLASVRLMIRADFPVPSITDIGHPAPNV GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPDLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPDLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI (81) (81)(81) (81) (81)(81)(81) (81)(81) (81) (81)(81)(81)(81)(81)81) (81) (81)

GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI

GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPDLKGAYKLEHLTSVRLMIRADFPVPSITDIGHPAPNV

GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI

GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI

GQVEVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKPEHLASVRLMIRADFPVPTINDLGNPSPNI

GKVQVWPEYKNRTITDMMDNPRIVIQALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVP--TDLGNPSPNI GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI

GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVVQK-NENGSFRREHLTSVTLSIRADFPVPSITDIGHPAPNV GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQRPVLKGAYKLEHLTSVRLMIRADFPVPTINDLGNPSPNI

GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPSITDIGHPAPNV (81) (81)SEQ:196_cd28D12-5 SEQ:195_cd28D11-1

(81)

SEQ:193_cd28D2-9 SEQ:194_cd28D8-9 GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPVLKGAYKLEHLASVRLMIRADFPVPTINDLGNPSPNI (81)

GKVQVWPEYKNRT1TDMNDNPR1V1LALRLSDSGTYTCV1QKPVLKGAYKLEHLASVRLM1RADFPVPT1NDLGNPSPN1 GKVQVWPEYKNRT1TDMNDNPR1V1LALRLSDSGTYTCV1QKPVLKGAYKLEHLASVRLM1RADFPVPT1NDLGNPSPN1 (81) SEQ:197_cd28E10-6 SEQ:198_cd28F7-2

GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPDLKGAYKLEHLTSVRLMIRADFPVPSITDIGHPAPNV (81)(81) SEQ:199_cd28F8-4

GKVQVWPEYKNRTITDMNDNPRIVILALRLSDSGTYTCVIQKPDLKGAYKLEHLASVRLMIRADFPVPSITDIGHPAPNV (81) (81) SEQ:201_cd28F12-5star SEQ:200_cd28F10-2

SEQ:202_cd28G2-8 SEQ:203_cd28G1-5

(81)(81)

> SEQ:204_cd28G1-9 SEQ:205_cd28H4-3

SEQ:207_cd28H6-6 SEQ:206_cd28H11-3

SEQ:209_cd28B4-5a SEQ:208_cd28E2-4

SEQ:210_cd28A2-5a

SEQ:211_cd28B4-5star

SEQ:212_cd28D5-6 SEQ:213_cd28D10-4

SEQ:214_cd28E2-5star

SEQ:216_cd28E8-6 SEQ:217_cd28E9-6 SEQ:218_cd28F3-1 SEQ:215_cd28E5-2

SEQ:220_cd28F3-6 SEQ:219_cd28F3-5

SEQ:221_cd28F11-8

SEQ: 283_CD28BP_Con

(81)

SEQ:188_cd28C7-3 SEQ:189_cd28C8-6 SEQ:190_cd28c9-5star SEQ:191_cd28C2-4 SEQ:192_cd28D2-3

SEQ:187_cd28C6-1

(81)(18) (81)(81)

Extracellular domain (ECD)

RRLICSTSGGFPRPHLYWLENGEELNATUTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATUTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATUTTLSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTVSQDPGTELYMISSELDFNVTNNHSIACLIKYGELSVSQIFPWSKPKQE KRIRCSASGDFPEPRLAMMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATWTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELLVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATUTTLSQDPETKLYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATWTTVSQDPETKLYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATUTUSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTVSQDPETKLYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE KRIRCSASGGFPEPRLAWMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTLSQDPETKLYMISSELDFNMTSNHSFLCLVKYGDLTVSQTFYWQESKPT KRIRCSASGGFPEPRLAMMEDGEELNAVNTTVDQDLDTELYSVSSELDFNATNNHSIVCLIKYGELSVSQIFPWSKPKQE (158) RRIICSTSGGFPEPHLSWLENGEELNAINTTVSQDPETELYAVSSKLDFNMTTNHSFMCLIKYGHLRVNQTFNWNTTKQE rrlicstsggfprphlywlengeelnatnttsqdpetklymisseldfnmtsnhsflclvkygdltvsqtfywqeskpt KRIRCSASGGFPEPRLAWMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE KRIRCSASGDFPEPRLAMMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTLSQDPETKLYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATUTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLCWLENGEELNATUTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATWTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATUTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQEKRIRCSASGGFPEPRLAMMEDGEELNAVNTTVDQDLDTELYSVSSELDSNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYMLENGEELNATNTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATUTTLSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE KRIRCSASGGFPEPRLAMMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATUTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPEPRLAWMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGF PRPHLYWLENGEELMATWTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIF PWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATUTTLSQDPETKLYMISSELDFNMTSNHSFLCLVKYGDLTVSQTFYWQESKPT (161)(161)(161)(160)(191) (161)(161) (161)(161)(191) (161)(161)(161)(160)(158)(161)(161)(161)(161)(161)(160)(161)(161)(157)(157)(161)(161)(161)(161)(161)(161)(161)(161)SEQ:184_cd28b6-6 SEQ:278_Human_B7-1 SEQ:177_cd28A6-9 SEQ:181_cd28B2-8 SEQ:185_cd28b8-5star SEQ:051_R1_Clone_126 SEQ:057_R2_CD28BP-6 SEQ:059_R2_CD28BP-8 SEQ:060_R2_CD28BP-9 SEQ:061_R2_CD28BP-10 SEQ:064_R2_CD28BP-13 SEQ:065_R2_CD28BP-14 SEQ:066_R2_CD28BP-15 SEQ:067_R2_CD28BP-16 SEQ:174_cd28A12-5 SEQ:175_cd28a4-5star SEQ:176_cd28A4-9 SEQ:180_cd28A8-6 SEQ: 182_cd28B4-3 SEQ:183_cd28B6-3 SEQ:186_cd28c11-5 SEQ:049_R1_Clone_84 SEQ: 050_R1_Clone_118 SEQ:053_R2_CD28BP-2 SEQ:054_R2_CD28BP-3 SEQ:055_R2_CD28BP-4 SEQ:056_R2_CD28BP-5 SEQ:058_R2_CD28BP-7 SEQ:062_R2_CD28BP-11 SEQ:063_R2_CD28BP-12 SEQ:178_cd28A6-1 SEQ:179_cd28A8-4 SEQ:048_R1_Clone_71 SEQ:052_R2_CD28BP-1 SEQ:068_R2_CD28BP-17

Extracellular domain (ECD)

Fig. 2E

RRLICSTSGGFPRPHLYWLENGEELNATNTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPEPRLAMMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICS----GFPRPHLYWLENGEELNATNTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATWTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATUTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE KRIRCSASGGFPEPRLAWMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKOE KRIRCSASGGFPEPRLAMMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTLSQDPETKLYMISSELDFNVTNNRSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGF PRPHLYWLENGKELNATNTTLSQDPETKLYMISSELDFNMTSNHSFLCLVKYGDLTVSQTFYWQESKPT KRIRCSASGGFPEPRLAWMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSOIFPWSKPKOE RRLICSTSGGFPRPHLYWLENGEELNATNTTLSQDPETKLYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATUTTVSQDPDTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE KRIRCSASGDFPEPRLAMMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATUTTVSQDPGTELYMISSELGFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYMLENGEELNATNTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTLSQDPETELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE KRIRCSASGDFPEPRLAMMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE KRIRCSASGDFPEPRLAMMEDGEELNAVNTTV---LDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTLSQDPETELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATUTTLSQDPETKLYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE KRIRCSASGDFPEPRLAMMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE KRIRCSASGDFPEPRLAMMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKOE RRLICSTSGGFPRPHLYWLENGEELNATUTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKOE KRIRCSASGGFPEPRLAMMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE KRIRCSASGGFPEPRLAWMEDGEELNAVNTTVDQDLDTELYSVSSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATNTTLSQDPETKLYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE KRIRCSASGGFPEPRLAMMEDGEELNAVNTTVDQDLDTELYSVSSELDFNWTSNHSFLCLVKYGDLTVSQTFYWQESKPT RRLICSTSGGFPRPHLYWLENGEELNATUTTLSQDPETKLYMISSELDFNMTSNHSFLCLVKYGDLTVSQSFYWQESKPT RRLICSTSGGF PRPHLYWLENGEELNATNTTLSQDPFTKLYMISSELDFNMTSNHSFLCLVKYGDLTVSQTFYWQESKPT RRLICSTSGGFPRPHLYWLENGEELNATUTTVSQDPFTKLYMISSELDFNTTSNHSFLCLVKYGDLTVSOTFYWOESKPT RRLICSTSGGFPRPHLYWLENGEELNATWTTVSQDPGTELYMISSELDFNVTNNHSIVCLIKYGELSVSQIFPWSKPKQE RRLICSTSGGFPRPHLYWLENGEELNATUTTLSQDPETKLYMISSELDFNMTSN---LCLVKYGDLTVSOTFYWOESKPT RRLICSTSGGFPRPHLYWLENGEELNATNTTLSQDPETKLYMISSELDFNMTSNHSFLCLVKYGDLTVSQTFYWQESKPT (158)(161)(161)(161) (161)(161)(161)(160)(161)(161)(161)(161)(161)(161)(161)(161)(160)(161)(161)(191) (161)(161)(160) (191) (191) (161)(159)(160)(161)161) (161)(161)(161)(161)SEQ:221_cd28F11-8 SEQ:210_cd28A2-5a SEQ:213_cd28D10-4 SEQ:214_cd28E2-5star SEQ:216_cd28E8-6 SEQ:217_cd28E9-6 SEQ:218_cd28F3-1 SEQ:219_cd28F3-5 SEQ:220_cd28F3-6 SEQ:283_CD28BP_Con SEQ:191_cd28C2-4 SEQ:194_cd28D8-9 SEQ:196_cd28D12-5 SEQ:197_cd28E10-6 SEQ:199_cd28F8-4 SEQ:200_cd28F10-2 SEQ:201_cd28F12-5star SEQ:202_cd28G2-8 SEQ:203_cd28G1-5 SEQ:204_cd28G1-9 SEQ:207_cd28H6-6 SEQ:208_cd28E2-4 SEQ:209_cd28B4-5a SEQ:211_cd28B4-5star SEQ:212_cd28D5-6 SEQ:215_cd28E5-2 SEQ:187_cd28C6-1 SEQ:188_cd28C7-3 SEQ:193_cd28D2-9 SEQ:198_cd28F7-2 SEQ:205_cd28H4-3 SEQ:206_cd28H11-3 SEQ:189_cd28C8-6 SEQ:190_cd28c9-5star SEQ:192_cd28D2-3 SEQ:195_cd28D11-1

Extracellular domain (ECD)

P-PIDQLPFWVIIP---VSGALVLTAVVLYCPACRHVARWKRTRRNEETVGTERLSPIYLGSAQSRAEVPSLSX P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTVVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFLVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFRVIIP---VSGALVLTAIVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAOSSG P-PIDQLPFWVIIP----VSGALVLTAVVLYRPACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP----VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLAAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDOLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDOLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDOLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDOLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAOSSG P-PIDOLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-PIDQLPFWVIIP---VSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG P-SANQHLTWTIIIPVSAFGISVIIAVILTCLTCRNAAIRRQRRENEVEMQSCSQSP-----P-SANQHLTWTIIIPVSAFGISVIIAVILTCLTCRNAAIRRQRRENEVKMQSCSQSP----P-SANOHLTWTIIIPVSAFGISVIIAVILTCLTCRNAAIRRORRENEVEMOSCSOSP---(238) HFPDNLLPSWAITL----ISVNGIFVICCLTYCFAPRCRERRNE-RLRRESVRPV P-PIDOLPFWVIVP---VSGALVLTAVVLYCLACRHVAR-----(241)(241)(240)(241)(241)(241)(241)(241)(241)(241)(241)(241)(238)(240)(241)241) (241)(241)(241)(241)(241)(241)(241)(241)(241)(241) (240)(241)(241)(237)(241)(241)SEQ:186_cd28c11-5 SEQ:278_Human_B7-1 SEQ:050_R1_Clone_118 SEQ:051_R1_Clone_126 SEQ:053_R2_CD28BP-2 SEQ:054_R2_CD28BP-3 SEQ:055_R2_CD28BP-4 SEQ:056_R2_CD28BP-5 SEQ:057_R2_CD28BP-6 SEQ:058_R2_CD28BP-7 SEQ:059_R2_CD28BP-8 SEQ:060_R2_CD28BP-9 SEQ:061_R2_CD28BP-10 SEQ:062_R2_CD28BP-11 SEQ:063_R2_CD28BP-12 SEQ:064_R2_CD28BP-13 SEQ:065_R2_CD28BP-14 SEQ:066_R2_CD28BP-15 SEQ:067_R2_CD28BP-16 SEQ:068_R2_CD28BP-17 SEQ:174_cd28A12-5 SEQ:175_cd28a4-5star SEQ:176_cd28A4-9 SEQ:177_cd28A6-9 SEQ:178_cd28A6-1 SEQ: 179_cd28A8-4 SEQ:180_cd28A8-6 SEQ:181_cd28B2-8 SEQ:182_cd28B4-3 SEQ:183_cd28B6-3 SE0:184_cd28b6-6 SEQ:185_cd28b8-5star SEQ:052_R2_CD28BP-1 SEQ:048_R1_Clone_71 SEQ:049_R1_Clone_84

Fig. 2G



ECD →	241 307	(241) P-PIDQLPFWVIIPVSGALVLTAVVLYCLACRHGARWKRTRRNEETVGTERLSPIYLGSAQSSG	(241) P-PIDQLPFWVIIPVSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG	(241)	(241)		(239) P-PIDQLPFWVIIPVSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG	(241) P-PIDQLPFWVIIPVSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG	(241) P-PIDQLPFWVIIPVSGALVLTAVVLYCLACRHVARWKRTRRNBETVGTERLSPIYLGSAQSSG	(240) P-PIDQLPFWVIILVSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG	(238)	(241) P-PIDQLPFWVIIPVSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG	(240) P-PIDQLPFWVIIPVSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG	(241) P-PIDQLPFWVIIPVSGALVLTAVVLYCLACRHVARWKRTRRNEETVGTERLSPIYLGSAQSSG	(241) P-		(238)							_	(241)	(241) P-SANQHLTWTIIIFVSAFGISVIIAVILTCLTCRNAAIRRQRRENEVEMQSCSQSP		(241)	(240)	(241)	(238) P-SANQHLTWTIIIFVSAFGISVIIAVILTCLTCRNAAIRRQRRENEVEMQSCSQSP					
		SEQ:187_cd28C6-1	SEQ:188_cd28C7-3	SEQ:189_cd28C8-6	SEQ:190_cd28c9-5star	SEQ:191_cd28C2-4	SEQ:192_cd28D2-3	SEQ:193_cd28D2-9	SEQ:194_cd28D8-9	SEQ:195_cd28D11-1	SEQ:196_cd28D12-5	SEQ:197_cd28E10-6	SEQ:198_cd28F7-2	SEQ:199_cd28F8-4	SEQ:200_cd28F10-2	SEQ:201_cd28F12-5star	SEQ:202_cd28G2-8	SEQ:203_cd28G1-5	SEQ:204_cd28G1-9	SEQ:205_cd28H4-3	SEQ:206_cd28H11-3	SEQ:207_cd28H6-6	SEQ:208_cd28E2-4	SEQ:209_cd28B4-5a	SEQ:210_cd28A2-5a	SEQ:211_cd28B4-5star	SEQ:212_cd28D5-6	SEQ:213_cd28D10-4	SEQ:214_cd28E2-5star	SEQ:215_cd28E5-2	SEQ:216_cd28E8-6	SEQ:217_cd28E9-6	SEQ:218_cd28F3-1	SEQ:219_cd28F3-5	SEQ:220_cd28F3-6	SEQ:221_cd28F11-8

Fig. 2H

Extracellular domain (ECD) Signal sequence MGHTRRQGTSPSKCPYLNFFQLLVLAGLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTR1YWQKEKKMVLTMMSGD

MGHTRROGI SPSKCPYLKFFOLLVLAGLSHFCSGV IHVTKEVKEVATLSCGHNVSVEELAQTR IHWOKEKKMVLTMMSGD MGYTRRQGTSPSKCPYLKFFQLLVLAGLSHLCSGV1HVTNEVKEVATLSCGHNVSGEELAQTR1YWQKEKKMVLTMMYGD MSHTRROGTSPSKCPYLKFFQLLVLASLSHFCSGVIHMTKEVKEVATLSCGHNVSVEELAQTRIYWQKEKKMVLTMMSGD

(1) SEQ:278_Human_B7-1

SEQ:076_R2_CTLA4BP-5X2-12F SEQ:074_R2_CTLA4BP-5x2-10c SEQ: 075_R2_CTLA4BP-5x2-11d SEQ:069_R1_CTLA4BP-5 SEQ: 070_R1_CTLA4BP-7 SEQ:071_R1_CTLA4BP-11 SEQ: 072_R1_CTLA4BP-13 SEQ:073_R1_CTLA4BP-27

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MGHTRRQGISPSKCPYLKFPQLLVLACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIYWQKEKKMVLTMMSGD

MSHTRROGISPSKCPYLNFPQLLVLASLSHFCSGVIHVTKEVKEVATLSCGLNVSVEELAQTRIYWQKEKKMVLTMMSGD

MSHTRRQGISPSKCPYLKFFQLLVLACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD

MGHTRROGISPPKCPYLNFFQLLVLACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD

MSHTRRQGISPSKCPYLKFFQLLVLASLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD MGHTRRQGTSPSKCPYLKFFQLLVLACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD MGYTRRQGTSPSKCPYLKFPQLLVLACLSHFCSGVIHVTREVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD

SEQ:080_R2_CTLA4BP-5x2-7b SEQ:087_R2_CTLA4BP-5x4-1f SEQ:089_R2_CTLA4BP-5x5-6e SEQ:077_R2_CTLA4BP-5x2-2g SEQ: 078_R2_CTLA4BP-5x2-3c SEQ:079_R2_CTLA4BP-5x2-4c SEQ:081_R2_CTLA4BP-5x2-8c SEQ:082_R2_CTLA4BP-5x3-10e SEQ:083_R2_CTLA4BP-5x3-11b SEQ:084_R2_CTLA4BP-5x3-6f SEQ:085_R2_CTLA4BP-5x4-11d SEQ:086_R2_CTLA4BP-5x4-12c SEQ:088_R2_CTLA4BP-5x5-2e SEQ:090_R2_CTLA4BP-5x6-9d SEQ:091_R2_CTLA4BP-5x8-1f

EQ:092_R2_CTLA4BP-5x9-12c SEO:222_ctla5x9d10 SEQ:223_ctla5x6f6 SEQ:225_ctla5x5c10

MSHTRRQGISPSKCPYLNFFLLLVLASLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD MSHTRRQGTSPSKCPYLKFFQLLVLASLSHFCSGVIHMTKEVKEVATLSCGHNVSVEELAQTRIYWQKEKKMVLTMMSGD

MSHTRRQGTSPSKCPYLKFFQLLVLASLSHFCSGVIHVTKEVKEVATLSCGLNVSVEELAQTR I YWQKEKKMVLTMMSGD

MGYTRRQGISPSKCPYLKFFQLLVLACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIYWQKEKKMVLTMMSGD MSHTRRQGISPSKCPYLKFFQLLVLACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIYWQKEKKMVLTMMSGD MGHTRRQGISPSKCPYINFFQLLVLAGLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIYWQKGKKMVLTMMSGD MGHTRRQGISPSKCPYLKFFQLLVLACLSHFCSGVIHVTKEVKEVATLSCGLNVSVEELAQTRIHWQKEKKMVLTMMSGD MGHTRRQGISPSKCPYLKFFQLLVLAGLPHLCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD MGHTRRQGISPSKCPYINPFQLLVLACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD MGHTRRQGTSPSKCPYLNFFQLLVLACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD MGYTRRQGTSPSKCPYLKFFQLLVLASLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTPIYWQKEKKMVLTMMSGD MGHTRRQGISPSKCPYLKFFQLLVLACLSHLCSGVIHVTKEVKEVATLSCGLNVSVEELAQTRIHWQKEKKMVLTMMSGD MGHTRRQGTSPSKCPYLKFFQLLVLAGLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD MGHTRRQGTSPSKCPYLKFFQLLVMACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD MSHTRRQGTSPSKCPYLKFFQLLVLAGLSHLCSGV1HVTKEVKEVATLSCGHNVSVEELAQTR1HWQKEKKMVLTMMSGD MSHTRRQGTSPSKCPYLKFFQFLVLASLSHFCSGV1HVTKEVKEVATLSCGLNVSVEELAQTR1YWQKGKKMVLTMMSGD <u>-</u> (1) (1) (T) (1) (1) (1)(1) Ξ (1) $\widehat{\Xi}$ $\overline{\mathbf{1}}$

MGYTRRQG1SPSKCPYLKFFQLLVLASLSHFCSGV1HVTKKVKEVATLSCGHNVSVEELAQTR1HWQKEKKMVLTMMSGD MSHTQRQGISPSKCPYLNFFQLLVLASLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTR1VWOKEKKMVLTMMSGD 1)

MGHTRRQGTSPSKCPYLKFFQLLVLAGLSHLCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIYWQKEKKMVLTMMSGD MSHIRRQGISPSKCPYLNFPQLLVLACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTR1YWQKEKKMVLTMMSGD MSHTRRQGTSPSKCPYLKFFQLLVLASLSHFCSGVIHMTKEVKEVATLSCGPNVSVEELAQTRIYWQKEKKMVLTMMSGD MSHTRRQGISSSKCPYLKFFQLLVLACLSHFCSGVIHVTKKVKEVATLSCGHNVSVEELAQTRIYWQKGKKMVLTMMSGD MGYTRRQGTSPSECPYLKFFQLLVLAGLSHFCSGVIHMTKEVKEVATLSCGLNVSVEELAQTRIHWQKEKKMVLTMMSGD MSHTRRQGISPSKCPYLNFFRLLVLASLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD MSHTRRQGISPSKCPYLKFFQLLVLASLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIYWQKEKKMVLTMMSGD MGHTRRQGISPSKCPYLKFFQLLVLASLSHFCSGVIHVTKEVKEVATLSCGLNVSVEELAQTRIYWQKEKKMVLTMMSGD MGYTRRQGTSPSKCPYLNFFQLLVLASLSHFCSGVIHVTKEVKEVATLSCGHNVPVEELAQTRIYWQKEKKMVLTMMSGD MGHTRRQGISPSKCPYLKFFQLLVLACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIYWQKDKKMVLTMMSGD MGHTRRQGTSPSKCPYLKFFQLLVLAGLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD MGHTRRQGISPSKCPYLKFFQLLVLACLSHFCSGVIYVTKEVKEVATLSCGHNVSVEELAQTRIYWQKEKKMVLIMMSGD MGHTRROGTSPSKCPYLKFFQLLVLAGLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKNVLTMMSGD MGYTRRQGTSPSKCPYLNFFQLLVLASLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD MGYTRRQGISPSKCPYLKFFQLLVLAGLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD MSHTRRQGISPSKCPYLKFFQLLVLAGLSHFCSGVIHVTKEVKEVATLSCGHNVSAEELAQTRIYWQKEKKMVLTMMSGD MGHTRRQGISPSKCPYLKFFQLLVLAGLSHFCSGVIHVTKEVKEVATLSCGLNVSVEELAQTRIHWQKEKKMVLTMMSGD MGYTRRQGISPSKCPYLKFFQLLVLACLSHFCSGVIHVTKEVKEVATLSCGHNVSDEELAQTRIHWQKEKKMVLTMMSGD MGYTRRQGISPSKCPYLKFFQLLVLAGLSHLCSGVIHVTKEVKEVATLPCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD MGHTRRQGISPSKCPYLKFFQLLVLAGLSHLCSGVIHMTKEVKEVATLSCGHNVSVEELAQTRIYWQKEKKMVLTMMSGD MGHTRRQGISPSKCPYLKFFQLLGLACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD MSHTRRQGISPSKCPYLKFFQLLVLACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAOTRIHWOKEKKMVLTMMSGD MGHTRRQGTSPSKCPYLKFFQLLVLAGLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIYWQKEKKMVLTMMSGD MSHTRRQGISPSKCPYLKFFQLLVLASLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIYWQKEKKMVLTMMPGD MSHTRRQGISPSKCPYLKFFQLLVLAGLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGG MGYTRRQGTSPSKCPYLKFFQLLVLACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIYWQKEKKMVLTMMSGD MGHTRRQGTSPSKCPYLNFFQLLVLACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIYWQKEKKNVLTMMSGD MGHTRRQGISPSKCPYLKFFQLLVLACLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQTRIHWQKEKKMVLTMMSGD Extracellular domain (ECD) Signal sequence Ξ $\widehat{\Box}$ F F ਰ ਰ a $\widehat{\Xi}$ F $\widehat{\Xi}$ $\widehat{\Xi}$ $\widehat{\Box}$ 7 1 a 1 1) $\widehat{\exists}$ $\widehat{\Gamma}$ 1 $\widehat{\Box}$ ਜ î î SEQ:226_ctla5x3e8 SEQ:232_ctla5x2b1 ns SEQ:240_ctla2x1f10 SEQ:227_ctla5x3c4 SEQ: 228_ctla5x3c3 SEQ:235_ctla2x4g9 SEQ:236_ctla2x4a6 SEQ:239_ctla2x1g8 SEQ:241_ctla2x1c9 SEQ:248_ctla5x4a1 SEQ:250_ctla5x2e12 SEQ:286_CTLA4BP_Con SEQ:229_ctla5x2h11 SEQ:230_ctla5x2d7 SEQ:231_ctla5x2b7 SEQ:233_ctla5x1f1 SEQ:234_ctla5x1d7 SEQ:237_ctla2x2f3 SEQ:238_ctla2x2f12 SEQ: 242_ctla2x1h12 SEQ:243_ctla2x1e2 SEQ:244_ctla2x1c4 SEQ:245_ctla2x1b12 SEQ:247_ctla5x4h1 SEQ:251_ctla2x4h11 SEQ:246_ctla2x2f1 SEQ:249_ctla5x2f3

Fig. 3B

MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPPSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSITDFEIPPSNIRRI MNIWPEYKNRTIFDITWNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSISDFEIFTSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSITDFEIPPSNIRRI MNIWPEYKNRTIFDITUNILSIVILAALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSITDFEIPPSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLEYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPPSNIRRI MNIWPEYKNRTIFDITINNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSITDFEIPPSNIRRI $ext{MNIWPEYKNRTIFD} ext{TNNLS} ext{IV} ext{ILPSD} ext{GCVVLEYEK} ext{DAFKREHLAEVTLSVKADFPTPS} ext{ITDFEIPPSNIRK} ext{INDFEIPPSNIRK}$ MNIWPEYKNRTIFDITUNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPPSNIRRI (81) (81) (81) (81)(81) (81) (81)(81) SEQ:088_R2_CTLA4BP-5x5-2e SEQ:089_R2_CTLA4BP-5x5-6e SEQ:090_R2_CTLA4BP-5x6-9d SEQ:091_R2_CTLA4BP-5x8-1f SEQ: 092_R2_CTLA4BP-5x9-12c SEQ:222_ctla5x9d10 SEQ:223_ctla5x6f6 SEQ:224_ctla5x5h12 SEQ:225_ctla5x5c10

MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVTLSVKADFPTPSISDFEIPTSNIRRI (81)SEQ:278_Human_B7-1

MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVTLSVKADFPTPSISDFEIPPSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSITDFEIPPSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSITDFEIPPSNIRRI

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SEQ: 072_R1_CTLA4BP-13

SEO: 073 R1 CTLA4BP-27

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SEQ:069_R1_CTLA4BP-5

SEQ:070_R1_CTLA4BP-7 SEQ: 071_R1_CTLA4BP-11 (81)

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SEQ: 074_R2_CTLA4BP-5x2-10c SEQ: 075_R2_CTLA4BP-5x2-11d SEQ:076_R2_CTLA4BP-5X2-12F (81)

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SEQ:078_R2_CTLA4BP-5x2-3c SEQ:079_R2_CTLA4BP-5x2-4c SEQ:080_R2_CTLA4BP-5x2-7b SEQ:081_R2_CTLA4BP-5x2-8c SEQ: 082_R2_CTLA4BP-5x3-10e SEQ:083_R2_CTLA4BP-5x3-11b SEQ:084_R2_CTLA4BP-5x3-6f SEQ:085_R2_CTLA4BP-5x4-11d SEQ:086_R2_CTLA4BP-5x4-12c SEQ:087_R2_CTLA4BP-5x4-1f

SEQ:077_R2_CTLA4BP-5x2-2g

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MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVTLSVKADFPTPSISDFEIPTSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSITDFEIPPSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSITDFEIPPSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVTLSVKADFPTPSITDFEIPPSNIKRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSITDFEIPTSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPTSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKQEHLAEVMLSVKADFPTPSITDFEIPPSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLEYEKDAFKREHLAEVTLSVKADFPTPSISDFEIPPSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRSSDEGTYECVVLKYEKDAFKREHLAEVTLSVKADFPTPSITDFEIPPSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLEYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPTSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYDKDAFKREHLAEVTLSVKADFPTPSISDFEIPPSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPTSNIRRI $ext{MNIWPEYKNRTIFDITMLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPPSNIRRI$ MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLEYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPPSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVTLSVKAGFPTPSITDFEIPPSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPPSNIRRI

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Extracellular domain (ECD)

MNIWEIKINKIITIOIINDSIVIDALKESDEGIIGOVVEBIERDAFARETARARVEDSVAADE IESIIDEEFFSNIRAT	SNIRRI	SNIRRI	SNIRRI				SNIRRI S		SNIRRI	SNIRRI	SNIRRI	SNIRRI	SNIRRI	SNIRRI	SNIRRI	SNIRRI	SNIRRI	SNIRRI	SNIRRI
בפקראבים ואנים אוים אים אים אים אים אים אים אים אים אים א	MNIWPEYKNQTIFDIINNESIVILALKESPEGIIECVVEKIEKDAF KQERLAEVMLSVAADF FIFSISDFEIFFSNIKKI	MILWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPPSNIRRI	MNIWPEYKNRTIFDITNNISIVILALRPSDEGT-ECVVLKYEKDAFKREHLAEVTLSVKADFPTPSISDFEIPPSNIRRI	MNIWPEYKŅRTIFDITNNLSIVILALRPSDEGTYGCVVLEYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPPSNIRRI	MNIWPEYKNRTIFDITNNLSVVILALRPSDEGTYECVVLKYEKDAFKREHLAEVTLSVKADFPTPSITDFEIPPSNIRRI	MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSITDFEIPPSNIRRI	MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLEYEKDAFKREHLAEVMLSVKADFPTPSITDFEIPTSNIRRI	MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSITDFEIPPSNIRRI	MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVTLSVKADFPTPSISDFEIPPSNIRRI	MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSITDFEIPPSNIRRI	MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVALKYEKDAFKQEHLAEVTLSVKADFPTPSISDFEIPPSNIRRI	MNIWPEYKNRTIFDITNNLSIVILALRLSDEGTYECVVLKYEKDAFKREHLAEVTLSVKADFPTPSISDFEIPTSNIRRI	MINPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKRKHLAEVMLSVKADFPTPSISDFEIPTSNIRRI	MINPEHKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVTLSVKADFPTPSITDFEIPTSNIRRI	I MNIWPEYKNRTIFDITMNLSIVILALRPSDEGTYECVVLRYEKDAFKREHLAEVTLSVKADFPTPSISDFEIPTSNIRRI	MINPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVTLSVKADFPTPSISDFEIPTSNIRRI	NIMPEYKNRTIFDITMNISIVILALRPSDEGTYECVVLEYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPPSNIRRI	MIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPPSNIRRI	MINPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPPSNIRRI
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SEQ:235_ctla2x4g9		SEQ:236_ctla2x4a6	SEQ:237_ctla2x2f3	SEQ:238_ctla2x2f12	SEQ:239_ctla2x1g8	SEQ:240_ctla2x1f10	SEQ:241_ctla2x1c9	SEQ:242_ctla2x1h12	SEQ:243_ctla2x1e2	SEQ:244_ctla2x1c4	SEQ:245_ctla2x1b12	SEQ:246_ctla2x2f1	SEQ:247_ctla5x4h1	SEQ:248_ctla5x4a1	SEQ:249_ctla5x2f3	SEQ:250_ctla5x2e12	SEQ:251_ctla2x4h11	SEQ:252_ctla2x3h2	SEQ:286_CTLA4BP_Con

MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVTLSVKADFPTPSISDFEIPPSNIRRI

MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVTLSVKADFPTPSISDFEIPTSNIRRI MNIWPECKNRTIFDITNNLSIVILALRPSDEGTYECAVLKYEKDAFKREHLAEVTLSVKADFPTPSISDFEIPTSNIRRI

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SEQ:228_ctla5x3c3

SEQ:229_ctla5x2h11 SEQ:230_ctla5x2d7

SEQ:226_ctla5x3e8 SEQ:227_ctla5x3c4 SEQ:231_ctla5x2b7 SEQ:232_ctla5x2b1 ns

SEQ:233_ctla5x1f1

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MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLEYEKDAFKREHLAEVTLSVKADFPTPSISDFEIPTSNIRRI

Extracellular domain (ECD)

MNIWPEYKNRTIFDIJNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPPSNIRRI MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVTLSVKADFPTPSITDFEIPPSNIRRI MNIWPEHKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVMLSVKADFPTPSISDFEIPPSNIRRI MNIWPEHKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVTLSVKADFPTPSITDFEIPPSNIRRI

Fig. 3D

ICSTSGGFPEPHLFWLENGEELNAINTTVSQDPETELYTVSSKLDFNMTTNRSFVCLIKYGHLRVNQTFNWNTPKQEHFP LCSTSGGFPEPHL.SWLENGEELNAINTTVSQDPGTELYTVSSKLDFNMTTDRSFVCLIKYGHLRVNQTFNWNTPKQEHFP 1 CSTSGGF PEPHLFWLENGEELNA I STTVSQDPETELYAVSSKLDFNMTTNHSFMCL I KYGHLRVNQTFNWNTTKQEHFP

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SEQ:223_ctla5x6f6

SEQ:224_ctla5x5h12

SEQ:225_ctla5x5c10

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Extracellular domain (ECD)

Fig. 3E

Extracellular domain (ECD) -

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SEQ:229_ctla5x2h11	(161)	ICSTSGGFPEPHLFWLENGEELNAINTTASQDPETELYAVSSKLDFNMTTNHSFMCLIKYGHLRVNQTFNWNTPKQEHFP
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(241)

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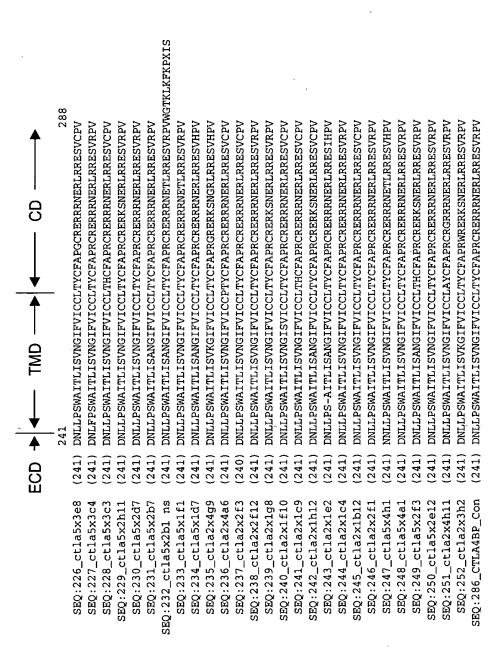


16/39

288 (241) DNLLPSWAITLISVNGIFVICCLTYCFAPRCRERRRNERLRRESVRPV DNLL PSWAITLISVNGIFVICCLTYCFAPRCRERRSNERLRRESVRPV (241) DNLLPSWAITLISANGIFVICCLAYCFAPGCRERKSNERLRRESVRPV DNLL PSWAITLISVNGIFVICCLTYCFAPRCRERRNERLRRESVRPV DNLLPSWAITLISVNGIFVICCLTYCFAPRCRERKSNERLRRESVRPV DNLL PSWAITLISVNGIFVICCLTYCFAPRCRERRNGRLRRESVRPV DNLLPSWAITLISVNGIFVICCLTYCFAPRCRERRRNERLRRESVRPV DNLLPSWAITLISANGIFVICCLTYCFAPRCRERKSNERLRRESVRPV DNLL PSWAITLISVNGIFVICCL TYCFAPRCRERRRNETLRRESVRPV DNLL PSWAITLISVNGIFVICCLTYCFAPRCRERR-NETLRRESVRPV DNPLPSWAITLISANGIFVICCLTYCFAPRCRERRRNETLRRESVRPV DNLL PSWAITLISVNGIFVICCLTYRFAPRCRERKSNERLRRESVRPV DNLLPSWAITLISVNGIFVICCLTYCFAPRCRERRRNERLRRESVCPV DNLLPSWAITLISVNGIFVICCLTYCFAPRCRERRRNERLRRESVHPV DNLL PSWAITLISANGIFVICCLTYCFAPRCRERRRNERLRRESVHPV DNLLPSWAITLISANGIFVICCLTYCFAPRCRERKSNERLRRESVHPV DNLL PSWAITLISVNGIFVICCLTYRFAPRCRERKSNERLRRESVRPV DNLLPSWAITLISANGIFVICCLTYRFAPRCRERKSNETLRRESVRPV DNLLPSWAITLISVNGIFVICCLTYCFAPRCRERRRNERLRRESVCPV DNLL.PSWAITLISVNGIFVICCL.TYCFAPRCRERRNETLRRESVRPV **DNLLPSWAITLISANGIFVICCLTHCFAPRCRERKRNERLRRESVRPV** DNLLPSWAITLISVNGIFVICCLTYCFAPRCRERKSNERLRRESVRPV DNLL PSWAITLISVNGIFVICCLTHCFAPRCRERRRNERLRRESARPV DNLLPSWAITLISVNGIFVICCLTYCFAPRCRERRRNERLRRESVRPV DNLL PSWAITLISVNGIFVICCLTHCFAPRCRERRRNERLRRESVHPV **DNLLPSWAITLISANGIFVICCLTYCFAPRCRERKSNETLRRESVRPV** DNLLPSWAITLISANGIFVICCLTYCFAPRCRERRNERLRRESVRPV DNLLPSWAITLISANGIFVICCLTYRFAPRCRERRNERLRRESVCPV (241)(241)(241)(241)(241)(241)(241)(241)241) 241) (241)(241) (241)(241)(241) (241)241) (241)(241)(241)241) (241)241) (241)241) SEQ:278_Human_B7-1 SEQ:080_R2_CTLA4BP-5x2-7b SEQ:083_R2_CTLA4BP-5x3-11b SEQ:069_R1_CTLA4BP-5 SEQ:072_R1_CTLA4BP-13 SEQ: 074_R2_CTLA4BP-5x2-10c SEQ: 075_R2_CTLA4BP-5x2-11d SEQ:076_R2_CTLA4BP-5X2-12F SEQ:077_R2_CTLA4BP-5x2-2g SEQ:078_R2_CTLA4BP-5x2-3c SEQ: 079_R2_CTLA4BP-5x2-4c SEQ:081_R2_CTLA4BP-5x2-8c SEQ:082_R2_CTLA4BP-5x3-10e SEQ:084_R2_CTLA4BP-5x3-6f SEQ:085_R2_CTLA4BP-5x4-11d SEQ:086_R2_CTLA4BP-5x4-12c SEQ:087_R2_CTLA4BP-5x4-1f SEQ:088_R2_CTLA4BP-5x5-2e SEQ:089_R2_CTLA4BP-5x5-6e SEQ:090_R2_CTLA4BP-5x6-9d SEQ:091_R2_CTLA4BP-5x8-1f SEQ: 092_R2_CTLA4BP-5x9-12c SEQ: 222_ctla5x9d10 SEQ:223_ctla5x6f6 SEQ:224_ctla5x5h12 SEQ:070_R1_CTLA4BP-7 SEQ:071_R1_CTLA4BP-11 SEQ: 073_R1_CTLA4BP-27

Fig. 3G

ig. 3H



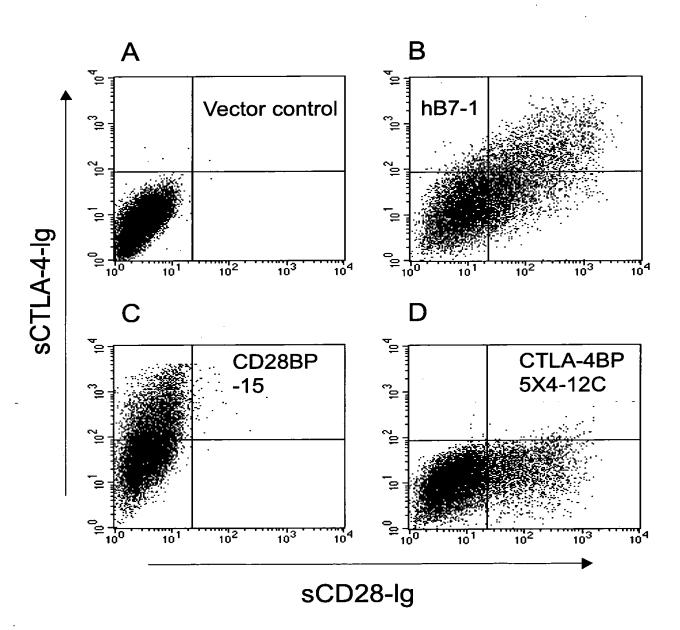
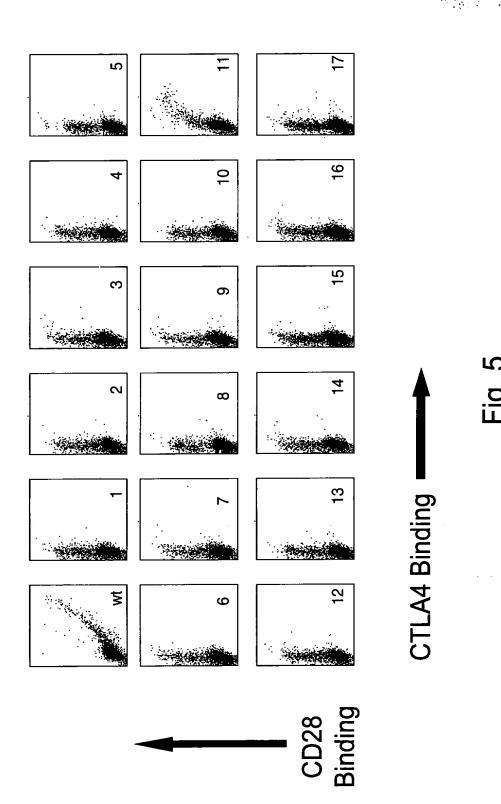
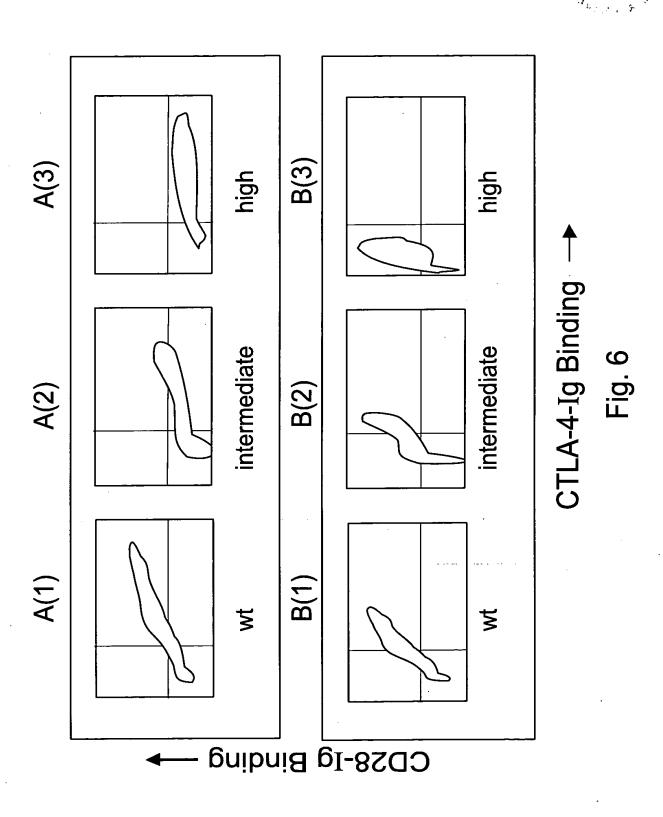


Fig. 4





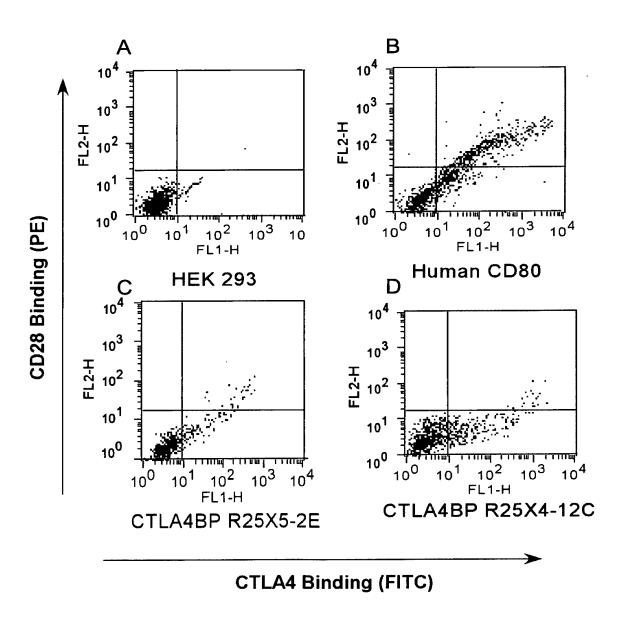
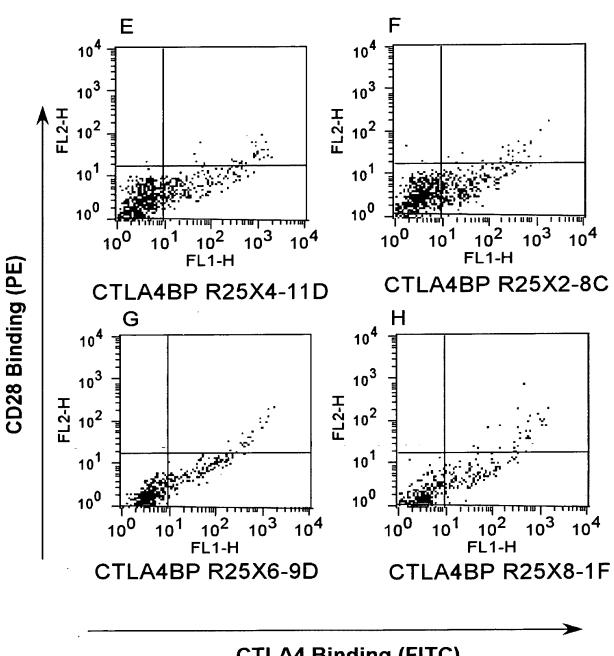


Fig. 7A-D



CTLA4 Binding (FITC)

Fig. 7E-H

RIHWQKEKKMVLTMMSGDMNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAF KREHLAEVMLSVKADFPTPSISDFEIPPSNIRRIICSTSGGFPEPHLFWLENGEELNAINTTVSQ DPETELYTVSSKLDFNMTTNHSFMCLIKYGHLRVNQTFNWNTPKQEHFPDNLLPSWAITLISĀ MGHTRRQGTSPSKCPYLŘFFQLLVLAGLSHFCSGVIHVTKEVKEVATLSCGHNVSVEELAQT CTLA-4BP Fig. 8A

NGIFVICCLTYRFAPRCRERKSNETLRRESVRPV

MGHTMKWGSLPPKRPCLWLSQLLVLTGLFYFCSGITPKSVTKRVKETVMLSCDYNTSTEELT

ĞAYKLEHLASVRLMİRADFPVPTINDLĞNPSPNIRRLİCSTSGGFPRPHLYWLENGEELNATINT Fig. 8B

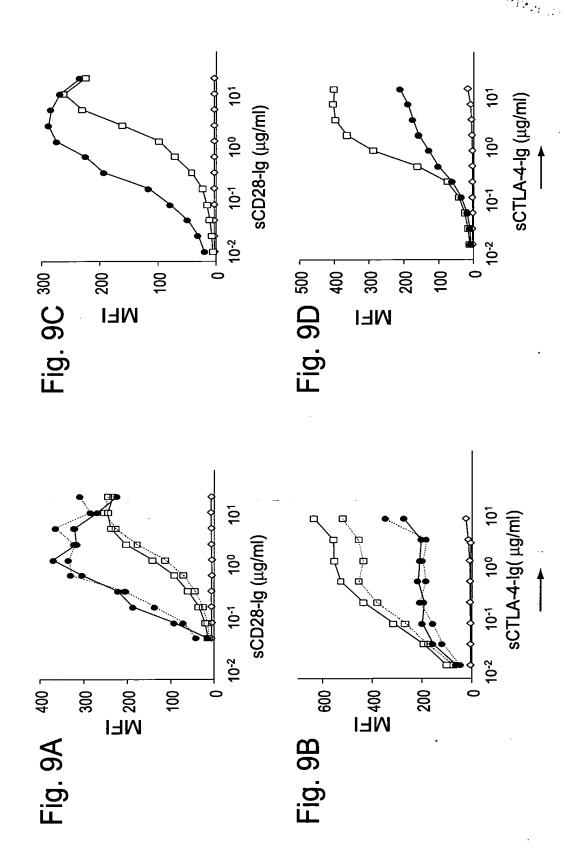
TVSQDPĞTELYMİSSELDFNVTNNHSİVCLIKYGELSVSQİFPWSKPKQEPPIDĞLPFWVIIPVS

orangutan human

rhesus/baboon Z rabbit § □

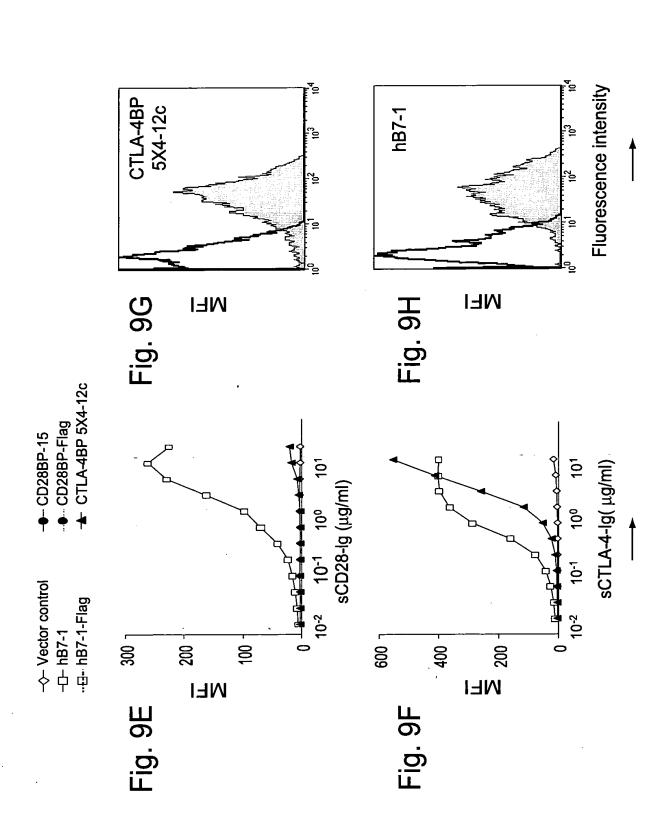
> rhesus baboon



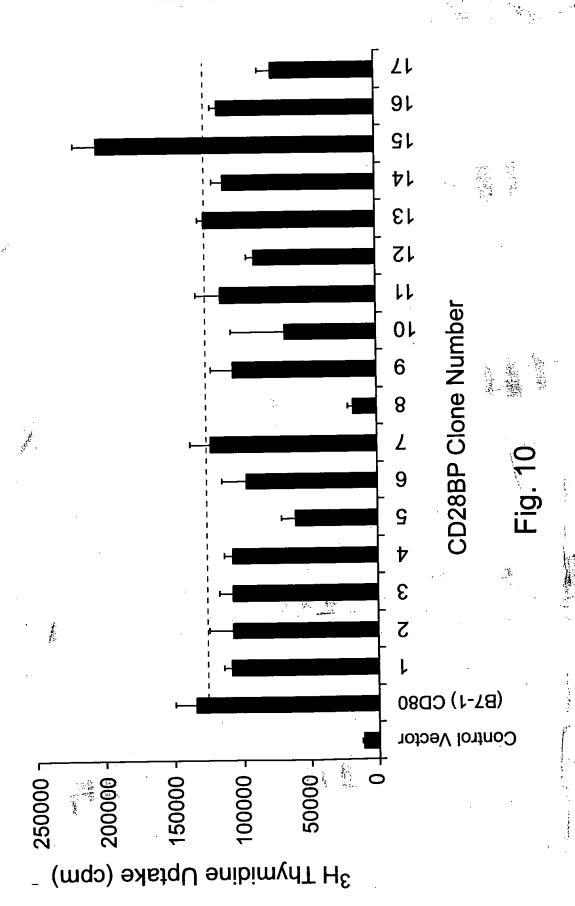


→ Vector control

-⊡- hB7-1 --⊡- hB7-1-Flag



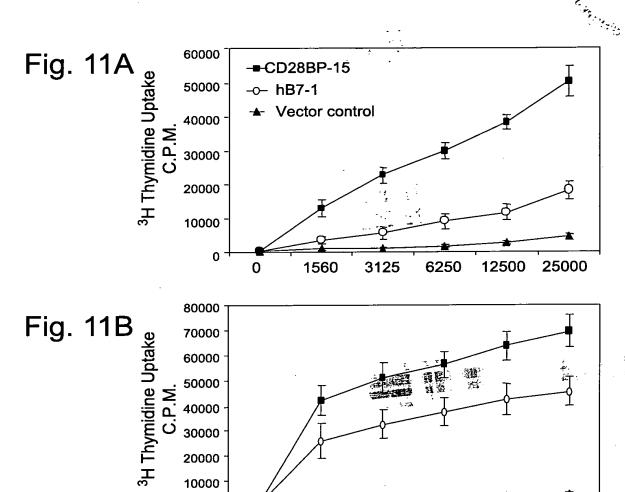
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12500

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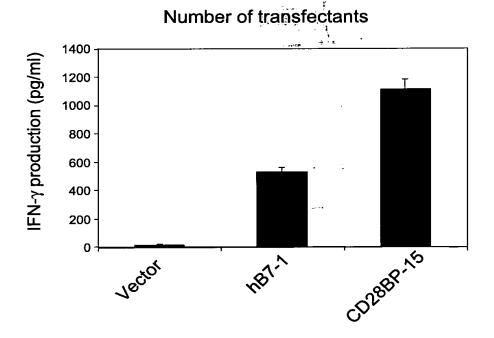


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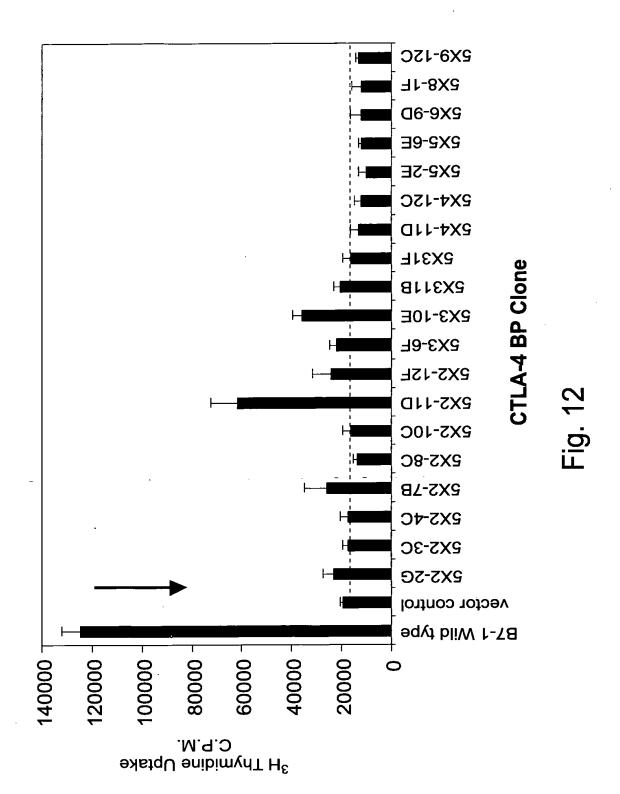
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Fig. 11C

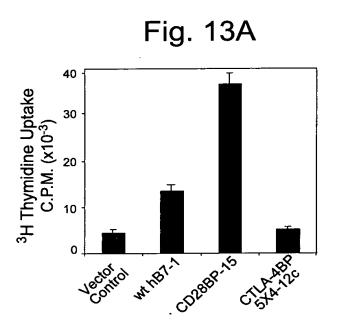


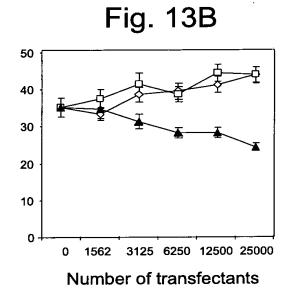
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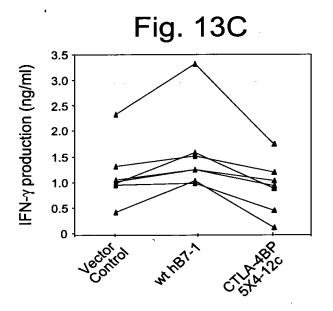
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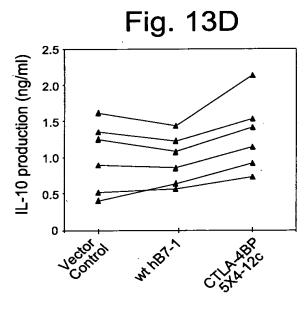


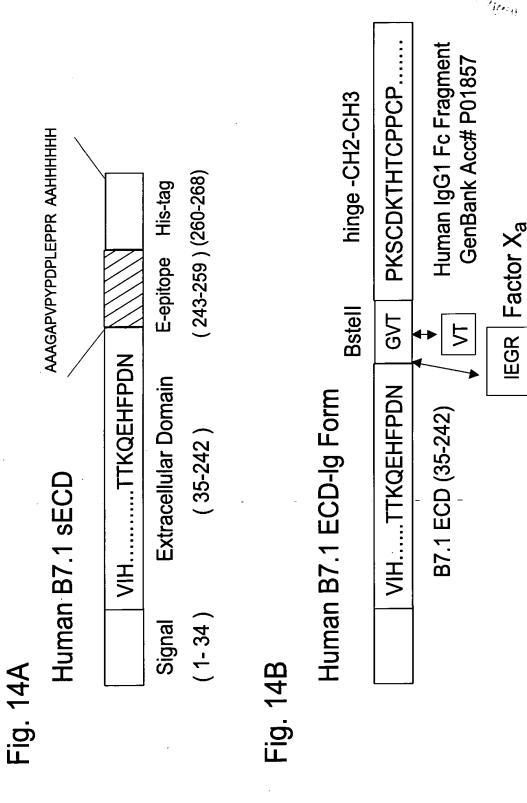












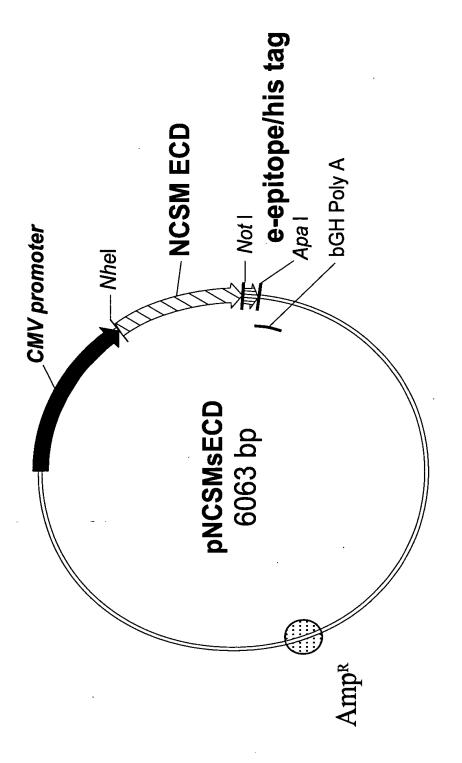


Fig. 15

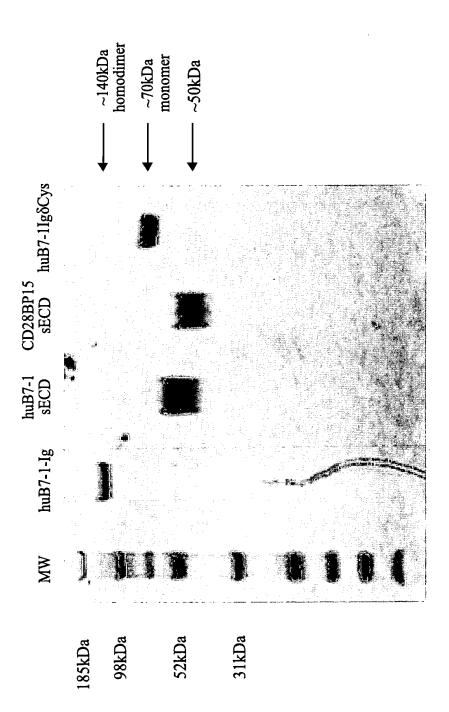


Fig. 16

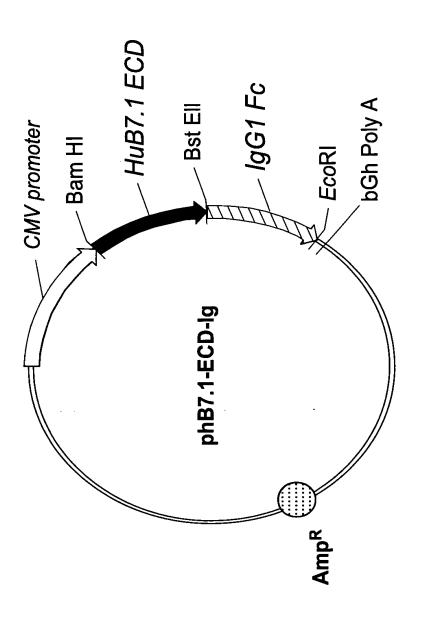


Fig. 17

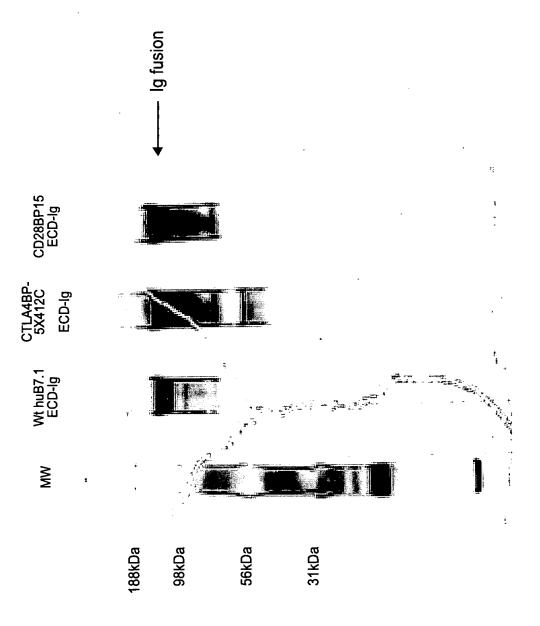


Fig. 18

CTLA-5X8-1F ECD-Fc
CTLA-5X2-8C ECD-Fc
CTLA-5X2-8C ECD-Fc
CTLA-5X2-8C ECD-Fc
CTLA-5X2-8C ECD-Fc
CTLA-5X4-11D ECD-Fc
CTLA-5X4-11D ECD-Fc
CTLA-5X4-11D ECD-Fc
CTLA-5X4-12C ECD-Fc
CTLA-5X4-12C ECD-Fc
CTLA-5X4-12C ECD-Fc
CTLA-5X1-Fc
Vector

~ ~ ~140 kDa
~ ~ ~70 kDa

Fig. 19

Fig. 20A

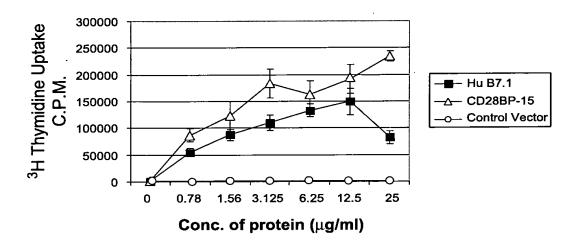
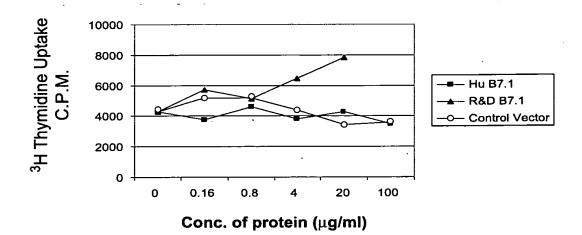
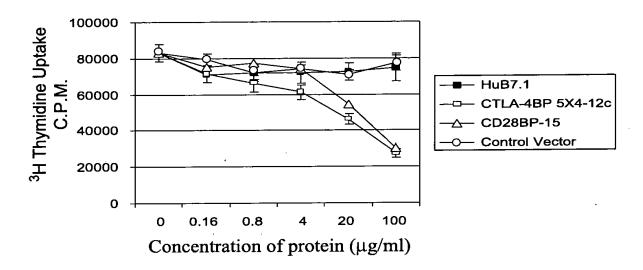


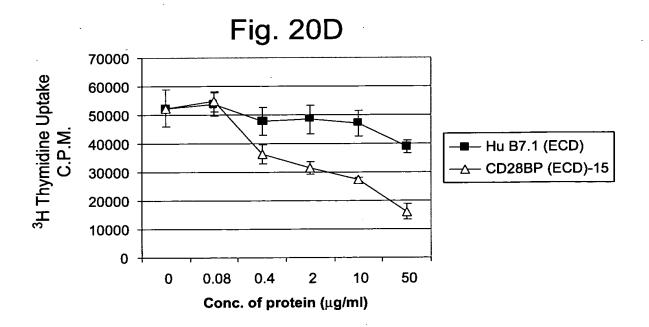
Fig. 20B



37/39

Fig. 20C





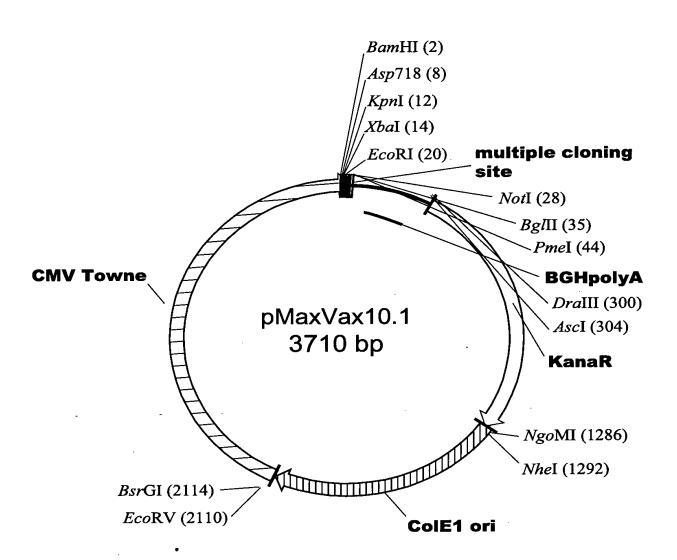


Fig. 21

39/39

Fig. 22A

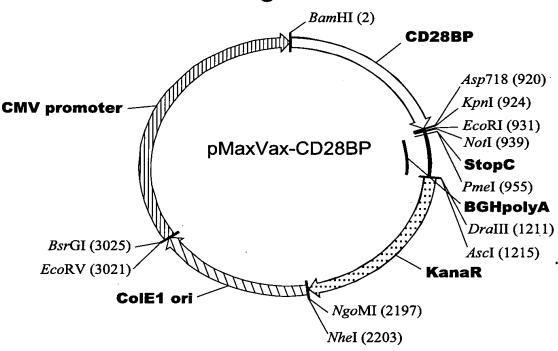


Fig. 22B

